

US Navy

Reverse Engineer Compressor Pump Castings with 43 Week Reduction in Lead Time and 40% Cost Savings

"The OEM quoted \$29,562 each plus 51 weeks lead time."

Customer Challenge

Naval Undersea Warfare Center (NUWC) – Keyport learned of the need for vacuum cone castings used on Ohio-class submarines. There were none in their supply system. The OEM quoted \$29,562 each plus 51 weeks lead time.

The Solution

The final castings were delivered to NUWC Keyport in 8 weeks for a cost of only \$18,200 each. NUWC Keyport reverse engineered the castings in order to create CAD files, which were used to print a sand mold package with the ExOne digital part materialization process.

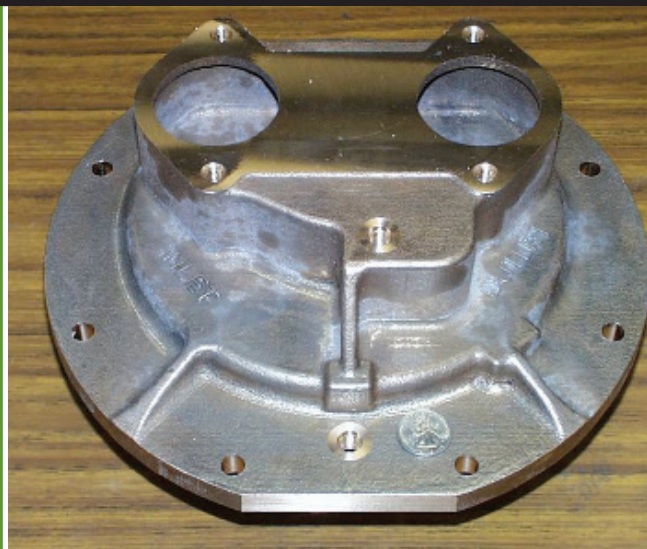
ExOne's Competitive Advantage

Additive manufacturing offers significantly shorter lead times and reduced component cost.

About ExOne

ExOne additive manufacturing technology uses three-dimensional printing to create complex molds and cores directly from CAD data for a variety of industries, with accuracies of ± 0.011 in. or ± 0.3 mm. The ExOne process achieves geometric complexity and scale unmatched using conventional casting techniques. The process produces accurate, uniform cores and molds rapidly, significantly reducing lead times.

ExOne operates facilities across the Americas, Europe and Asia.



Specifications

Customer: Naval Undersea Warfare Center – Keyport

Batch Size: 4

Part Size: 11 x 5 x 10 inch

Material: Leaded red brass

Traditional Method

Pattern-based sand casting

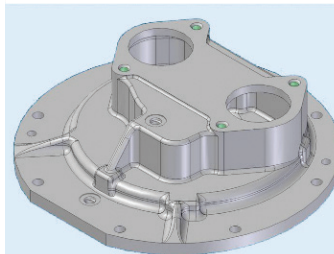
Time: 51 weeks

Cost: \$29,562

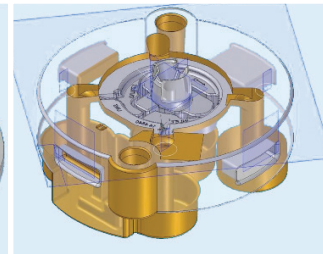
ExOne® Sand Printing Method

Time: 8 weeks

Cost: \$18,200



CAD Rendering



CAD Rendering

To learn more, contact: www.exone.com